

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on June 2, 2009, and the references cited therewith.

Claims 14-17, 19, 20, 25, and 27-31 were previously withdrawn by the Applicant, and claim 26 has been withdrawn by the Examiner. As a result, claims 1-13, 18, 21-24, 32, and 33 are now pending in this application.

35 USC § 102 Rejection of the Claims

Claim 9 was rejected under 35 U.S.C. § 102(b) as being anticipated by Kim (U.S. Publication No. 2001/0021051) according to the Examiner.

In particular, the Examiner cites Kim, para. 0019, arguing that this paragraph discloses a laser driver that receives a digital voltage sequence and generates a current signal having a bias mode adjustable by a bias control and a modulation mode adjustable by a modulation control.

No such disclosure is made by Kim. Kim discloses the creation of a current signal whose magnitude changes in accordance with an error detection signal (Kim, para. 0019). But this passage does not disclose or suggest a current signal with a bias mode adjustable by a bias control of a laser driver, nor does this passage disclose or suggest a current signal with a modulation mode adjustable by a modulation control of a laser driver.

Therefore Kim does not disclose every feature of claim 9. For at least this reason, this claim is not anticipated by Kim.

35 USC § 103 Rejection of the Claims

Claims 1-8, 18, 21-23 and 32-33 were rejected under 35 U.S.C. § 103(a). The Examiner has argued that these claims are unpatentable over Kim in view of Chun et al. (U.S. Patent No. 6,294,933).

With respect to claim 1, the Examiner argues that Chun discloses complementary coupling of a first single-ended voltage signal with a second single-ended voltage signal to generate a differential data voltage signal. On the contrary, Chun neither discloses nor suggests this feature. Chun discloses two different differential signals, which he calls a first differential signal OUTA and a second differential signal OUTB. Chun does not disclose or suggest a complimentary coupling of two single-ended voltage signals to generate a differential data voltage signal. Neither differential signal OUTA nor differential signal OUTB are the result of the coupling of single-ended voltage signals (Chun, col. 3, lines 28-38 and FIG. 1). Therefore Chun fails to disclose or suggest a complimentary coupling of a first single-ended voltage signal with a second single-ended voltage signal to generate a differential data voltage signal. Nor is this feature disclosed or suggested by Kim.

Given that this feature of claim 1 is neither disclosed nor suggested by Kim or Chun, claim 1 is not rendered obvious over these references, whether considered alone or in any reasonable combination.

The Examiner also argues that claims 2-8 are obvious in light of the Kim and Chun references. These claims depend from claim 1, and the rejection of these claims is premised on the alleged obviousness of claim 1. Moreover, each of claims 2-8 include all features of claims 1. Given that claim 1 includes at least one feature that is not disclosed or suggested by Kim or Chun, claims 2-8 likewise each include at least one feature that is not disclosed or suggested by these references. For at least this reason, none of claims 2-8 are obvious over Kim and Chun, whether considered alone or in any reasonable combination.

The Examiner also rejected claim 18, arguing that this claim is obvious over Kim in view of Chun. In particular, the Examiner argues that Kim discloses a transimpedance amplifier circuit to convert a first current signal to a first differential voltage signal. Kim makes no such disclosure. Kim discloses the conversion of current signals to voltage signals, and voltage

signals to digital signals, but there is no discussion of a particular means for accomplishing this (Kim, para. 0058). Moreover, there is no disclosure or suggestion of a transimpedance amplifier. Nor does Chun disclose or suggest a transimpedance amplifier circuit to convert a first current signal to a first differential voltage signal. Kim and Chun therefore do not disclose or suggest all features of claim 18, whether these references are considered alone or in any reasonable combination. For at least these reasons, claim 18 is not obvious over these references.

In addition, the Examiner argues that Chun discloses a sampler circuit to receive an aligned clock signal and to receive a differential voltage signal and to generate a digital voltage sequence. Chun makes no such disclosure. Referring to this passage and to FIG. 1 of this reference, Chun discloses the input of a clock signal at transistors 108 and 110, and an inverted clock signal at transistors 114 and 116. This results in a pair of differential signals OUTA and OUTB. Transistor 118 serves to “develop” this differential signal pair. Chun has no disclosure or suggestion of circuitry that receives both a differential voltage signal and an aligned clock signal to generate a digital voltage sequence (Chun, col. 3, lines 28-38, and FIG. 1). Nor does Kim disclose or suggest such a feature. For this reason as well, Chun and Kim fail to render claim 18 obvious, whether these references are considered alone or in any reasonable combination.

The Examiner has also rejected claims 21 and 22, arguing that these claims are obvious over the Kim and Chun references. These claims depend from claim 18, and the Examiner’s rejection of these claims is premised on the alleged obviousness of claim 18. Each of claims 21 and 22 necessarily includes all features of claim 18. As discussed above, claim 18 includes features not disclosed or suggested by Kim or Chun. Hence claims 21 and 22 each include features not disclosed or suggested by these references. Claims 21 and 22 are therefore not obvious over Kim and Chun, whether considered alone or in any reasonable combination.

Claim 23 was also rejected by the Examiner, who argues that this claim is obvious over Kim and Chun. In particular, the Examiner argues that para. 0019 of Kim discloses a laser driver having a bias control and a modulation control, where the laser driver receives a digital voltage sequence and generates a current signal having a bias mode adjustable by the bias control and a modulation mode adjustable by the modulation control. As discussed above with respect to

claim 9, no such disclosure is made by Kim. Nor are these features disclosed or suggested by Chun.

With respect to claim 23, the Examiner also argues that Kim discloses a transimpedance amplifier circuit to convert a first current signal to a first differential voltage signal. As discussed above with respect to claim 18, Kim makes no such disclosure. Nor does Chun disclose or suggest a transimpedance amplifier circuit to convert a first current signal to a first differential voltage signal.

The Examiner further argues that Kim discloses a sampler circuit to generate a second digital voltage sequence responsive at least in part to an aligned clock signal and a first differential voltage signal. Kim makes no such disclosure. Kim describes a change in frequency of clock signals in a circuit containing a series of delays. There is no disclosure or suggestion of generating a digital voltage sequence responsive to a clock signal and another voltage signal (Kim, para. 0073). Nor is such a feature disclosed or suggested by Chun.

Hence Kim and Chun, whether considered alone or in any reasonable combination, fail to disclose or suggest all features of claim 23. For at least this reason, claim 23 is not obvious over these references.

Claims 32 and 33 are also rejected by the Examiner, who argues that these claims are obvious over Kim and Chun. These claims depend from claim 23 and therefore include all features thereof. Given that Kim and Chun fail to disclose or suggest all features of claim 23, these references likewise fail to disclose or suggest all features of either of claims 32 and 33. For at least this reason, claims 32 and 33 are not obvious over Kim and Chun, whether these references are considered alone or in any reasonable combination.

Claims 10 and 13 were rejected under 35 U.S.C. § 103(a). The Examiner has argued that these claims are unpatentable over Kim in view of Bosch et al. (U.S. Patent No. 6,130,562). The rejection of these claims is premised on the Examiner's contention that claim 9, from which claims 10 and 13 depend, is anticipated by Kim. As discussed above, claim 9 includes features that are not disclosed or suggested by Kim. Nor are these features disclosed or suggested by Bosch. Because claims 10 and 13 each include all features of claim 9, these claims also include features that are neither disclosed nor suggested by the cited art. For at least this reason, claims

10 and 13 are not obvious over Kim and Bosch, whether these references are considered alone or in any reasonable combination.

Claims 11 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Bosch and further in view of Tsai (U.S. Patent No. 6,735,228). The rejection of these claims is premised on the Examiner's contention that claim 9, from which claims 11 and 12 depend, is anticipated by Kim. As discussed above, claim 9 includes features that are not disclosed by Kim. Nor are these features disclosed by Bosch or Tsai. Because claims 11 and 12 each include all features of claim 9, these claims also include features that are neither disclosed nor suggested by the cited art. For at least this reason, claims 10 and 13 are not obvious over Kim, Bosch, and Tsai, whether these references are considered alone or in any reasonable combination.

Claim 24 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Chun and further in view of Bosch. This claim depends from claim 23 and therefore includes all features thereof. Given that claim 23 includes features not disclosed or suggested by the Kim and Chun references, claim 24 likewise includes features not disclosed or suggested by the Kim and Chun. Moreover, these features, discussed above with respect to claim 23, are also not disclosed or suggested by Bosch. For at least this reason, claim 24 is not obvious over Kim, Chun, and Bosch, whether these claims are considered alone or in any reasonable combination.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((410) 489-7685) to facilitate prosecution of this application.

Respectfully submitted,

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